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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/584,977	07/17/2009	Panu Hamalainen	540-023.002	6539

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SULLIVAN & WORCESTER LLP  
1666 K Street NW  
Washington, DC 20006

EXAMINER
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BROWN, ANTHONY D

ART UNIT	PAPER NUMBER
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2433

NOTIFICATION DATE	DELIVERY MODE
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12/08/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/584,977	<b>Applicant(s)</b> HAMALAINEN ET AL.	
	<b>Examiner</b> ANTHONY BROWN	<b>Art Unit</b> 2433	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 March 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>9/27/2006</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This communication is responsive to the application filed 7/17/2009. Claims 1-38 are pending and presented for examination. Claims 1, 16, 31, 34 and 38 are the independent claims and the remaining claims are dependent. Claims 1-2, 5, 14-15, 27-30 and 38 have been amended.

### ***Priority***

1. This application claims foreign priority to Application 20030919 filed on December 29, 2003 in Finland.

### ***Information Disclosure Statement***

1. The information disclosure statement (IDS) submitted on 9/27/2006 was filed after the mailing date of the application on 7/17/2009. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### ***Claim Objections***

1. Claims 1-38 are objected to because of the following informalities: Misspelling of words. For example, claim 1 recites the term "synchronising".

Appropriate correction is required.

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2. Claims 2-15, 17-30, 32-33 and 35-37 are objected to because of the following informalities: Claims 2-15, 17-30, 32-33 and 35-37 recites "a method according to claim 1, characterized in that the synchronization of local time of the distributed domain comprises..." There is insufficient antecedent basis for this limitation in the claim.

Applicant should change --a method-- to --the method--.

Appropriate correction is required.

3. Claim 24 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim. For example, claim 24 recites "a terminal according to claim 16, characterized in that the terminal comprises a watchdog for performing functional steps of any method claims 1-13". See MPEP § 608.01(n). Accordingly, claim 24 has not been further treated on the merits.

### ***Claim Rejections - 35 USC § 101***

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

1. Claims 1-13 and 34-37 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

2. In particular, claims 1-13 and 34-37 claims to "a method for real-time betting, within a communications system comprising a distributed domain and central domain, by handling electronic records that contain predictions of the outcome of a certain incident..." that do nothing more than solve mathematical problems or manipulate abstract ideas or concepts that consisting solely of mathematical operations and

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abstract ideas without some practical applications and thus cannot constitute a statutory process. While the claims recite a series of steps or acts to be performed, a statutory "process" under 35 U.S.C. 101 must (1) be tied to particular machine, or (2) transform underlying subject matter (such as an article or material) to a different state or thing. See page 10 of In Re Bilski 88 USPQ2d 1385. The instant claims are neither positively tied to a particular machine that accomplishes the claimed method steps nor transform underlying subject matter, and therefore do not qualify as a statutory process.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1-38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hamalainen (US Patent Publication 2004/0015442) in view of Hammerstad (US Patent Publication 2002/0111855).

**As per claim 1, 16, 31, 34 and 38:** (currently amended) Hamalainen discloses a method for real-time betting, within a communications system comprising a distributed domain and central domain, by handling electronic records that contain predictions of the outcome of a certain incident, comprising (**see abstract**):

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generating, within the distributed domain, a multitude of electronic records that contain predictions of the outcome of the incident, according to players' inputs

**(Paragraph 74; Within the distributed domain there is generated, before the outcome of the incident is known, a multitude of electronic records that contain predictions of the outcome of the incident);**

furnishing, within the distributed domain, each of the electronic records with a cryptographically protected proof of a certain moment of a distributed domain time associated with the generation of the electronic record **(Paragraph 44; furnishing each of the electronic records with a cryptographically protected proof of a certain moment of time associated with the generation of the electronic record);**

characterized in that the method further comprises

receiving, within the distributed domain, repetitive beacon tick packets and watchdog tick packets, comprising time information of local time of the central domain at the moment the packet was sent **(See figure 15, 16 element 1500, 1600, 1700, 1800),**

synchronizing local time of the distributed domain, with time equated with the central domain time information received by the beacon tick packets, by help of values of a counter in the distributed domain and time information in received beacon tick packets **(Paragraph 92; tamper-proof possibility of using a locally generated clock signal is to use such a clock signal for time-stamping, which is also used directly to synchronizes certain critical operations of the terminal arrangement).**

Hamalainen do not specifically disclose verifying validity of local time of the distributed domain regarding to the central domain's local time by comparing local time

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of the distributed domain to time information relating to local time of the central domain received by the watchdog tick packets.

Hammerstad discloses the subscriber's current local time is calculated, as previously described, at 519. Provided that the subscriber's current local time matches the time significance by being within the time window of significance, at 521, an advertiser's content URL (which may be the same as that used in determining time significance) is recalled, at 523, from the service provider's storage (**Paragraph 23**).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, having the teachings of Hamalainen and Hammerstad as a whole, to modify the technique of Hamalainen for using off-line terminals for betting and/or gambling with the help of electronic communications systems by adopting Hammerstad's teaching for delivery time significant information to the user. The motivation would have been to enable a secure offline real-time betting system.

**As per claims 2, 17 and 31:** (currently amended) Hamalainen in view of Hammerstad discloses the method according to claim 1, characterized in that the synchronization of local time of the distributed domain comprises:

receiving, within the distributed domain, repetitive first and second beacon tick packets broadcasted by a predetermined time interval and reading a value of the counter at the moment of receiving the first and second beacon tick packets (**See Hamalainen, Paragraph 121; the terminal may apply for example polling at arbitrary time intervals to check, whether the organizer's system is ready for**

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**receiving the time-stamped bet record transmission(s). A large number of terminals may be attempting these transmissions simultaneously),**

in order to create a conversion factor comparable to the interval of the first and second received beacon tick packets and to the values of the counter at the moments of receiving the first and second beacon tick packets **(See Hamalainen, Paragraph 115; compare the final results against the transmissions received from the players in order to check that the betting went according to applicable regulations) (See Hammertad, Paragraph 23),**

sending a request from the distributed domain to the central domain to send a response to indicate accurate central domain's local time at the moment of receiving the request and at the moment of sending the response **(See Hamalainen, Paragraph 8);**

initializing a clock indicating local time of the distributed domain **(See Hamalainen, Paragraph 82-83; a clock signal generating block 604 for locally generating clock signals, and a time-stamping block 605 for using the generated clock signals for time-stamping bet records);**

receiving the response from the central domain and reading time information of the central domain's local time and a value of the counter at a moment of receiving the response, in order to construct a clock offset by computing an average delay between  $t_1$ ,  $t_0$  and  $t_3$  **(See Hamalainen, Paragraph 111; it may be required that the terminal applies a certain delay after having received the message of step 1425. The length of the delay may be predetermined for each terminal, or the terminals may use**

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**some random or pseudorandom process to generate individual delay lengths)**

and

updating new local time of the distributed domain essentially equating to the central domain's local time by adding to latest local time (to) of the distributed domain the clock offset and a value derived by multiplying with the conversion factor the difference of the values of the counter at the moment of receiving the response from the central domain and at the moment of sending the request to the central domain (**See Hammerstad, Paragraph 23**).

**As per claims 3 and 18:** (original) Hamalainen in view of Hammerstad discloses the method according to claim 1, characterized in that the betting process is an off-line betting process (**See Hamalainen, Paragraph 74**).

**As per claims 4:** (original) Hamalainen in view of Hammerstad discloses the method according to claim 1, characterized in that the beacon tick packets and watchdog tick packets are broadcasted by a predetermined time interval (**See Hamalainen, Paragraph 121**); (**See Hamalainen; See figure 15, 16 element 1500, 1600, 1700, 1800**).

**As per claim 5:** (currently amended) Hamalainen in view of Hammerstad discloses the method according to claim 1, characterized in that the beacon tick packet, being protected information packet broadcasted to a distribution domain regularly, comprises at least one of the following information: time information relating to central domain's local time at a moment the beacon tick packet was sent from the central domain, delay of the next coming beacon tick packet to be broadcasted to the distributed domain (**See**

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**Hamalainen, Paragraph 115; compare the final results against the transmissions received from the players in order to check that the betting went according to applicable regulations) (See Hammertad, Paragraph 23).**

**As per claim 6:** (original) Hamalainen in view of Hammerstad discloses the method according to claim 1, characterized in that the watchdog tick packet comprises at least one of the following information: time information relating to central domain's local time at a moment the watchdog tick packet was sent from the central domain, delay of the next coming watchdog tick packet to be broadcasted to the distributed domain, security parameters, key updates and message authentication code (**See Hamalainen, Paragraph 115; compare the final results against the transmissions received from the players in order to check that the betting went according to applicable regulations) (See Hammertad, Paragraph 23).**

**As per claims 7 and 19:** (original) Hamalainen in view of Hammerstad discloses the method according to claim 1, characterized in that delay of the next coming watchdog and/or beacon tick packet is compared to delay information announced in the previous watchdog and/or beacon tick packet, and the watchdog and/or beacon tick packet is accepted only if the delay of the next coming watchdog and/or beacon tick packet is valid (**See Hamalainen, Paragraph 115; compare the final results against the transmissions received from the players in order to check that the betting went according to applicable regulations) (See Hammertad, Paragraph 23).**

**As per claim 8:** (original) Hamalainen in view of Hammerstad discloses the method according to claim 1, characterized in that the beacon tick packets and watchdog tick

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packets are broadcasted from the central domain (**See Hamalainen, Paragraph 78, 84; An announcements generation block 615 is responsible for generating both the general broadcast announcements to all participating players and the personal messages that are only transmitted to individual players or small groups of players**).

**As per claim 9:** (original) Hamalainen in view of Hammerstad discloses the method according to claim 1, characterized in that the beacon tick packets are broadcasted by a Digital Audio Broadcasting transmitter arrangement and/or a Digital Video Broadcasting transmitter arrangement (**See Hamalainen, Paragraph 100; a wireless or cable-based DAB (Digital Audio Broadcasting) or DVB (Digital Video Broadcasting) network**).

**As per claims 10 and 20:** (original) Hamalainen in view of Hammerstad discloses the method according to claim 1, characterized in that an interval from the player's input to latest to next beacon tick packet is measured either in terms of counter values or of distributed domain's local time (**See Hamalainen, Paragraph 121; the terminal may apply for example polling at arbitrary time intervals to check, whether the organizer's system is ready for receiving the time-stamped bet record transmission(s). A large number of terminals may be attempting these transmissions simultaneously**), and

stored in a cryptographically form with the player's input to the electronic record (**See Hamalainen, Paragraph 44; furnishing each of the electronic records with a cryptographically protected proof of a certain moment of time associated with the**

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**generation of the electronic record).**

**As per claims 11 and 21:** (original) Hamalainen in view of Hammerstad discloses the method according to claim 1, characterized in that a value of the counter and/or an electric clock signal representing the local time of the distributed domain at the said moment is used as an input in generating a cryptographically protected proof of a certain moment of a distributed domain (**See Hamalainen, Paragraph 82-83; a clock signal generating block 604 for locally generating clock signals, and a time-stamping block 605 for using the generated clock signals for time-stamping bet records**).

**As per claims 12 and 22:** (original) Hamalainen in view of Hammerstad discloses the method according to claim 1, characterized in that the counter is a free running independent counter, and the distributed domain comprises more than one counter the rate of which are constant and independent of each other, and in that values of the first counter are used for internal log of events and returned to the central domain, and values of the second counter are used for time service of the distributed domain (**See Hamalainen, Paragraph 113; there is within the terminal a protected algorithm (which may well be the same as or in close connection to the time-stamping algorithm) which accumulates a counter each time when a bet is placed and which discloses the highest counter value reached before the actual closing time in all subsequent transmissions of time-stamped bet records to the organizer and the supervisor**).

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**As per claim 13:** (original) Hamalainen in view of Hammerstad discloses the method according to claim 1, characterized in that stored data, a value of the counter and/or an electric clock signal representing the local time of the distributed domain are chained by help of a key (**See Hamalainen, Paragraph 79; a unidirectional algorithm 401 is used to convert the actual contents of the bet and a certain clock signal into a bet record that is authenticated by encrypting it with a private key of the player placing the bet and encrypted with the public key of the organizer**).

**As per claim 14:** (currently amended) Hamalainen in view of Hammerstad discloses the computer program product directly loadable into the internal memory of a digital computer, characterized in that it comprises software code portions for performing claim 1 when said product is run on a computer (**See Hamalainen, Paragraph 79**).

**As per claim 15:** (currently amended) Hamalainen in view of Hammerstad discloses the computer program product stored on a computer usable medium, characterized in that it comprises computer readable program means for causing a computer to perform claim 1 when said product is run on a computer (**See Hamalainen, Paragraph 79**).

**As per claim 23:** (original) Hamalainen in view of Hammerstad discloses the terminal according to claim 16, characterized in that the terminal is arranged to read a value of the free running counter and store it in a memory means of the terminal for later user or verification, when at least one of the following event occurs: an information packet is received within the terminal, and the player makes an action, such as places his/her bet (**See Hamalainen, Paragraph 113; there is within the terminal a protected algorithm (which may well be the same as or in close connection to the time-**

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**stamping algorithm) which accumulates a counter each time when a bet is placed and which discloses the highest counter value reached before the actual closing time in all subsequent transmissions of time-stamped bet records to the organizer and the supervisor)..**

**As per claim 24:** (original) Hamalainen in view of Hammerstad discloses the terminal according to claim 16, characterized in that the terminal comprises a watchdog for performing functional steps of any method claims 1-13 (**See Hamalainen, Paragraph 98; The watchdog algorithm may itself be an encryption algorithm the execution of which is synchronized into a local hardware counter**).

**As per claim 25:** (original) Hamalainen in view of Hammerstad discloses the terminal according to claim 24, characterized in that the watchdog is arranged to inform the central domain of values of the counter by sending information of counter values to the central domain (**See Hamalainen, Paragraph 98; The watchdog algorithm may itself be an encryption algorithm the execution of which is synchronized into a local hardware counter**).

**As per claim 26:** (original) Hamalainen in view of Hammerstad discloses the terminal according to claim 24, characterized in that the watchdog is performed within a protected integrated circuit (**See Hamalainen, Paragraph 98; The watchdog algorithm may itself be an encryption algorithm the execution of which is synchronized into a local hardware counter**).

**As per claim 27 and 36:** (currently amended) Hamalainen in view of Hammerstad discloses the terminal according to claim 16, characterized in that the terminal

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comprises a data network access means for establishing two-way data link between the terminal and the central domain for bet record storage initialization and transferring broadcast parameters (**See Hamalainen, Paragraph 73, 78; channel of information exchange between the distributed domain and the central domain**).

**As per claim 28 and 37:** (currently amended) Hamalainen in view of Hammerstad discloses terminal according to claim 16, characterized in that the terminal comprises a broadcast reception means for establishing one-way data link between the terminal and the central domain for transferring beacon tick packets and watchdog tick packets, watchdog key update packets, and bet start/end packets from central domain to the terminal (**See Hamalainen, Paragraph 73, 78; channel of information exchange between the distributed domain and the central domain**).

**As per claim 29:** (currently amended) Hamalainen in view of Hammerstad discloses the terminal according to claim 24, characterized in that the watchdog comprises also timing means being responsible for controlling that watchdog tick packets are received and that they are received at right time, and for adjusting local time of the terminal according to received data packets (**See Hamalainen, Paragraph 98; The encryption-type watchdog algorithm requires a new cryptographic key to be supplied to it according to a predefined time schedule, so that a missing or wrong key interrupts the operation of the algorithm, which in turn makes it impossible to compose, time-stamp and/or transmit any more bet records. This is what it meant by the algorithm being a watchdog: if it is not functioning properly, the whole betting application or at least an essential part of it must fail in the terminal**

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**arrangement).**

**As per claim 30:** (currently amended) Hamalainen in view of Hammerstad discloses the terminal according to claim 24, characterized in that the watchdog comprises a communication protection means for encrypting and decrypting communication and checking signatures, storage key management means for creating and updating keys for storing data, such as placed bets (**See Hammerstad, Paragraph 23**), and storage entry generation means for encrypting and chaining entries, adding time-stamps and/or counter values to data, such as placed bets, and watchdog software means, which are responsible for authentication of a player, and processing of application data (**See Hamalainen, Paragraph 98; The watchdog algorithm may itself be an encryption algorithm the execution of which is synchronized into a local hardware counter**).

**As per claim 33:** (original) Hamalainen in view of Hammerstad discloses the organizer server according to claim 31, characterized in that the organizer server is arranged to wait a predetermined time interval announced in the previous beacon/watchdog tick packet, until send the next beacon/watchdog tick packet (**See Hamalainen, Paragraph 115; compare the final results against the transmissions received from the players in order to check that the betting went according to applicable regulations**) (**See Hammertad, Paragraph 23**).

**As per claim 35:** (original) Hamalainen in view of Hammerstad discloses the arrangement according to claim 34, characterized in that an information traffic between the central domain and distributed domain is encrypted (**See Hamalainen, Paragraph**

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**73, 78; channel of information exchange between the distributed domain and the central domain).**

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY BROWN whose telephone number is (571)270-1472. The examiner can normally be reached on Monday to Friday 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivek Srivastava can be reached on 571-272-7304. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Anthony Brown  
Art Unit: 2433  
December 1, 2010

/Brandon S Hoffman/  
Primary Examiner, Art Unit 2433